UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,315	10/29/2001	Robert V. Farese JR.	UCAL-105CIP2	1732

24353 7590 01/27/2005

BOZICEVIC, FIELD & FRANCIS LLP
1900 UNIVERSITY AVENUE
SUITE 200
EAST PALO ALTO, CA 94303

EXAMINER	
HUTSON, RICHARD G	

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,315	FARESE ET AL.	
	Examiner	Art Unit	
	Richard G. Hutson	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) *1-14 and 22-65* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/04,6/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The art unit location of your application and examiner has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1652, Examiner Richard Hutson Ph.D.

Election/Restrictions

Applicant's election with traverse of Group VI, Claims 15-17 and 19 in the paper of 10/18/2004, is acknowledged. The traversal is on a number of ground(s).

Firstly, applicants traverse the restriction requirement on the basis that it would not be unduly burdensome to perform a search on claims 1-29 together.

Applicants argument is not found persuasive because while the searches for the each of the groups may overlap, they are not coextensive. For example, search of Groups I through III would require search of subclasses 800/8 and 536/23.2 and a search of Groups IV and V would require search of subclasses 435/325 and 526 23.2. A search of each of these subclasses would be unnecessary for the search of the elected group VI. Similarly, groups VII through XVII would further involve the additional search of class/subclasses unnecessary for the elected group VI. Further many of the additional groups would involve a search of polynucleotide databases, unnecessary for the elected group VI drawn to a screening assay for modulators of DGAT activity using human DGAT protein.

Secondly applicants state at the very least that claims 18, 20, 21, and 22 should be rejoined with claims 15-17 and 19.

Applicants traversal with respect to claims 18, 20 and 21 is persuasive, because each of these claims further limits the elected screening assays which are drawn to methods of using the DGAT polypeptide rather then the DGAT polynucleotide itself. Claim 22 remains withdrawn for the reasons previously stated and because claim 22 is drawn to said screening assay which further comprises the use of a DGAT polynucleotide. It is noted that applicants did not give reasons why they believe that the above claims should be rejoined.

Thirdly, applicants express their displeasure for receiving three restriction requirements in the space of 13 months in the instant application.

Applicants displeasure is noted and the office sincerely apologizes for the number of restriction requirements applicants have received in the pending application. It is again noted to applicants that the instant application has been transferred to a new examiner in a new art unit.

Claims 1-14 and 22-65 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609

A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Applicants filing of information disclosures filed 4/19/2004 and 6/1/2004 are acknowledged. Those references considered have been initialed.

Claim Objections

Claims 15 and 17 are objected to because of the following informalities:

Claims 15 recites "said method" when there is no antecedent basis for "said method". This is unlike claim 19 which recites "said screening assay".

Claim 17 is objected to because claim 17 recites "DGAT polypeptide is a human DGAT", while claim 18 recites "said DGAT polypeptide is mouse DGAT". It is suggested that consistency be used throughout the claims, thus referring to either "a human or mouse DGAT" or "human or mouse DGAT".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15-21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 15-21 are directed to all screening assays for determining a candidate agent's DGAT modulatory activity, comprising contacting any DGAT polypeptide with said candidate agent and detecting any change in activity of said DGAT polypeptide compared to a control to determine said candidate agent's DGAT modulatory activity (claim 15) wherein said modulatory activity is inhibitory activity (claim 16), wherein said DGAT polypeptide is a human or mouse DGAT (claims 17 and 18) wherein said screening assay is an in vitro screening assay (claim 19). The specification, however, only provides a single representative species human DGAT polypeptide, comprising the amino acid sequence of SEQ ID NO: 5, and thus methods of using this DGAT polypeptide in the claimed screening assays for determining candidate agents DGAT modulatory activity, encompassed by these claims. There is no disclosure of any particular structure to function/activity relationship in the single disclosed species. The specification also fails to describe additional representative species of these DGAT polypeptides by any identifying structural characteristics or properties other than the activity recited in claim 1, for which no predictability of structure is apparent. Given this lack of additional representative species as encompassed by the claims, Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Applicant is referred to the revised guidelines concerning compliance with the written description requirement of U.S.C. 112, first paragraph, published in the Official Gazette and also available at www.uspto.gov.

Claims 15-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a screening assay for determining a candidate agent's DGAT modulatory activity, comprising contacting a human DGAT polypeptide having the amino acid sequence of SEQ ID NO: 5 with said candidate agent and detecting any change in activity of said DGAT polypeptide compared to a control to determine said candidate agent's DGAT modulatory activity, does not reasonably provide enablement for any screening assay for determining a candidate agent's DGAT modulatory activity, comprising contacting any DGAT polypeptide with said candidate agent and detecting any change in activity of said DGAT polypeptide compared to a control to determine said candidate agent's DGAT modulatory activity. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Factors to be considered in determining whether undue experimentation is required, are summarized in In re Wands (858 F.2d 731, 8 USPQ 2nd 1400 (Fed. Cir. 1988)) as follows: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claim(s).

Claims 15-21 are so broad as to encompass any screening assay for determining a candidate agent's DGAT modulatory activity, comprising contacting any DGAT polypeptide with said candidate agent and detecting any change in activity of said DGAT polypeptide compared to a control to determine said candidate agent's DGAT modulatory activity (claim 15) wherein said modulatory activity is inhibitory activity (claim 16), wherein said DGAT polypeptide is a human or mouse DGAT (claims 17 and 18) wherein said screening assay is an in vitro screening assay (claim 19). The scope of the claims is not commensurate with the enablement provided by the disclosure with regard to the extremely large number of DGAT polypeptides and thus methods of their use, encompassed by the claims, including the claimed methods of use of any polypeptide having DGAT activity and variants thereof. The claims rejected under this section of U.S.C. 112, first paragraph, do not place any structural limits on the DGAT polypeptides used by the claimed methods. Since the amino acid sequence of a protein determines its structural and functional properties, predictability of which changes can be tolerated in a protein's amino acid sequence and obtain the desired activity requires a knowledge of and guidance with regard to which amino acids in the protein's sequence, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification), and detailed knowledge of the ways in which the proteins' structure relates to its function. However, in this case the disclosure is limited to those methods of use of the DGAT polypeptide having the amino acid sequence of SEQ ID NO: 5.

While recombinant and mutagenesis techniques are known, it is not routine in the art to screen for multiple substitutions or multiple modifications, as encompassed by the instant claims, and the positions within a protein's sequence where amino acid modifications can be made with a reasonable expectation of success in obtaining the desired activity/utility are limited in any protein and the result of such modifications is unpredictable. In addition, one skilled in the art would expect any tolerance to modification for a given protein to diminish with each further and additional modification, e.g. multiple substitutions.

The specification does not support the broad scope of the claims which encompass all methods of determining a candidate agent's DGAT modulatory activity comprising the use of any DGAT polypeptide and variants thereof because the specification does not establish: (A) regions of the protein structure of DGAT which may be modified without effecting DGAT activity; (B) the general tolerance of DGAT polypeptides to modification and extent of such tolerance; (C) a rational and predictable scheme for modifying any amino acid residue of a DGAT with an expectation of obtaining the desired biological function; and (D) the specification provides insufficient guidance as to which of the essentially infinite possible choices is likely to be successful. Because of this lack of guidance, the extended experimentation that would be required to determine which substitutions would be acceptable to retain the DGAT activity necessary to practice the claimed methods and the fact that the relationship between the sequence of a peptide and its tertiary structure (i.e. its activity) are not well understood and are not predictable (e.g., see Ngo et al. in The Protein Folding

Problem and Tertiary Structure Prediction, 1994, Merz et al. (ed.), Birkhauser, Boston, MA, pp. 433 and 492-495, Ref: U, Form-892), it would require undue experimentation for one skilled in the art to arrive at the majority of those methods of use of a DGAT polypeptide of the claimed genus.

Thus, applicants have not provided sufficient guidance to enable one of ordinary skill in the art to make and use the claimed invention in a manner reasonably correlated with the scope of the claims broadly including any screening assay for determining a candidate agent's DGAT modulatory activity, comprising contacting any DGAT polypeptide with said candidate agent and detecting any change in activity of said DGAT polypeptide compared to a control to determine said candidate agent's DGAT modulatory activity. The scope of the claims must bear a reasonable correlation with the scope of enablement (In re Fisher, 166 USPQ 19 24 (CCPA 1970)). Without sufficient guidance, determination of having the desired biological characteristics is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue. See In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 16 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Tabatan et al. (Phytochemistry, Vol 46, No. 4, October 1997, pp 683-687, See IDS).

Tabatan et al. teach screening assay comprising contacting a DGAT polypeptide with a candidate agent, xanthohumol, and detecting a change in the activity of said DGAT polypeptide compared to a control. Thus Tabatan et al. anticipates claims 15, 16 and 19.

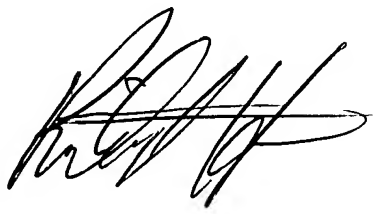
Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard G. Hutson whose telephone number is (571) 272-0930. The examiner can normally be reached on 7:30 am to 4:00 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard G Hutson, Ph.D.
Primary Examiner
Art Unit 1652

Rgh
12/28/2004